
TITLE 410 INDIANA STATE DEPARTMENT OF HEALTH

Proposed Rule
LSA Document #13-351

DIGEST

Amends [410 IAC 6-10.1-49](#), [410 IAC 6-10.1-61](#), [410 IAC 6-10.1-69](#), [410 IAC 6-10.1-72](#), [410 IAC 6-10.1-84](#), and [410 IAC 6-10.1-98](#) concerning the requirement for ownership of a temporary sewage holding tank, the separation distance between an on-site sewage system and a lake or reservoir used as a public water supply, the requirement for the construction of septic tank baffles, the daily flow rating for septic tank outlet filters, the discharge rate for flood dosed systems, the volume of a dosing tank under certain conditions, and the requirement for removal of abandoned buried electric lines. Effective 30 days after filing with the Publisher.

[IC 4-22-2.1-5 Statement Concerning Rules Affecting Small Businesses](#)

[410 IAC 6-10.1-49](#); [410 IAC 6-10.1-61](#); [410 IAC 6-10.1-69](#); [410 IAC 6-10.1-72](#); [410 IAC 6-10.1-84](#); [410 IAC 6-10.1-98](#)

SECTION 1. [410 IAC 6-10.1-49](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-49](#) General sewage disposal requirements

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 49. (a) No person shall throw, run, drain, seep, or otherwise dispose into any of the surface waters or ground waters of this state, or cause, permit, or suffer to be thrown, run, drained, allowed to seep, or otherwise disposed into such waters, any organic or inorganic matter from a commercial facility or commercial on-site sewage system that would cause or contribute to a health hazard or water pollution.

(b) The:

- (1) design;
- (2) construction;
- (3) installation;
- (4) location;
- (5) maintenance; and
- (6) operation;

of commercial on-site sewage systems shall comply with the provisions of this rule.

(c) All commercial on-site sewage systems utilizing sanitary privies shall conform to department bulletin SE 11, "The Sanitary Vault Privy", 1986 Edition.

(d) Any commercial facility that is not connected, or cannot be connected, to a sanitary sewerage system shall be provided with a commercial on-site sewage system that includes a septic tank and a soil absorption system that has not failed.

(e) A temporary sewage holding tank is an alternative method of sewage disposal subject to the written approval of the department. A temporary sewage holding tank shall not be used as a primary means of commercial sewage disposal except:

- (1) where necessary to prevent continued discharge of sewage from a failed existing commercial on-site sewage system;
- (2) when soil conditions exist that preclude the prompt construction of a soil absorption system on a site that has already received a construction permit; or
- (3) where the holding tank is ~~owned and~~ operated by a conservancy district, sewer district, private utility, or municipality as a part of its sewage disposal plan or for not more than two (2) years while connection to sanitary sewer is being secured. This two (2) year time frame may be extended upon documentation of satisfactory operation of the holding tank.

(f) No portion of the commercial on-site sewage system or its associated drainage system shall be constructed upon property other than that from which the sewage originates unless easements, which grant permission for such construction and access for system maintenance, have been obtained for that property and have been legally approved and recorded by the proper authority or commission.

(g) Commercial on-site sewage systems shall not be used for the disposal of water from:

- (1) roof drains;
- (2) foundation drains;
- (3) swimming pool main drains;
- (4) hot tub drains; or
- (5) area drains.

Neither shall they be used for the disposal of chemical wastes in quantities that would pollute ground water or inhibit solids settling or digestion in the septic tank.

(h) In order to encourage development of new or more efficient treatment or disposal processes, the department may issue construction permits for experimental and TNI commercial on-site sewage systems. Construction permits may be issued for installations, treatment, or disposal equipment, processes, or techniques for which extensive experience or records of use have not been developed in Indiana. However, the applicant must submit evidence of sufficient clarity and conclusiveness to convince the department that the proposal has a reasonable and substantial probability of satisfactory operation without causing a health hazard, nuisance, surface water pollution, or ground water pollution. The department may also require the applicant to satisfactorily document how and by whom the experimental facilities and any other portions of the commercial on-site sewage system, which could be damaged due to a failure of the experimental installation, are to be replaced if it becomes necessary.

(Indiana State Department of Health; [410 IAC 6-10.1-49](#); filed Oct 19, 2012, 2:07 p.m.: [20121114-IR-410120157FRA](#))

SECTION 2. [410 IAC 6-10.1-61](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-61](#) Minimum separation distances

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 61. (a) All septic tanks, dosing tanks, lift stations, and soil absorption systems shall be located in accordance with Table II, as follows:

| Table II – Minimum Separation Distances | | |
|---|--|------------------------|
| Minimum Distance in Feet from | Septic Tank and Other Treatment Units, Dosing Tank, Lift Station | Soil Absorption System |
| Private water supply well ^{1,2} | 100 | 100 |
| Private geothermal well ^{1,2} | 100 | 100 |
| Commercial water supply well ¹ | 100 | 100 |
| Commercial geothermal well ¹ | 100 | 100 |
| Public water supply well, lake, ^{1, 3, 4} or reservoir ^{1, 3, 4} | 200 | 200 |
| Other pond, retention pond, lake, or reservoir ³ | 50 | 50 |
| Storm water detention area ^{3, 4 5} | 25 | 25 |
| River, stream, ditch, or drainage tile ^{5 6} | 25 | 25 |
| Buildings, foundations, slabs, garages, patios, barns, aboveground and belowground swimming pools, retaining walls, closed loop geothermal systems, roads, driveways, parking areas, or paved sidewalks | 10 ^{6 7} | 10 ^{7 8} |
| Front, side, or rear lot lines | 5 | 5 |

| | | |
|--|----|----|
| Water lines continually under pressure | 10 | 10 |
| Suction water lines | 50 | 50 |
| ¹ The distances enumerated shall be doubled for soil absorption systems constructed where there exist horizons, layers, or strata within thirty-four (34) inches of the ground surface with a soil loading rate greater than seventy-five hundredths (0.75) gallons per day per square foot as determined from Table V of section 78(b)(8) of this rule, unless that hazard can be overcome through on-site sewage system design. | | |
| ² The separation distance to a private water supply well abandoned in accordance with 312 IAC 13-10-2 (e) may be reduced to ten (10) feet. | | |
| ³ Measured from the normal or ordinary high water mark. | | |
| ⁴ See subsections (b) and (c). | | |
| ^{4 5} Storm water detention area: area designated for the temporary detention of storm water, with the outlet located at the lowest elevation of the depression. | | |
| ^{5 6} See section 63(f) of this rule for subsurface drainage system separation. | | |
| ^{6 7} Patios without footers, aboveground swimming pools, and sidewalks may be located within ten (10) feet of septic tank, as long as no required access points are obstructed. | | |
| ^{7 8} A minimum separation of ten (10) feet is required on all sites. | | |

(b) A commercial on-site sewage system shall not be located within two hundred (200) feet of a public water supply lake or reservoir. However, any commercial on-site sewage system that includes secondary treatment and meets the following requirements may be less than two hundred (200) feet, but not less than fifty (50) feet, from the normal or ordinary high water mark of the lake or reservoir:

- (1) Meets the minimum requirements of section 68(h)(1) through 68(h)(3) of this rule.**
- (2) Is approved by the department under the provisions of section 49(h) of this rule.**

(c) Any commercial on-site sewage system approved under the provisions of subsection (b) must be maintained for the life of the system through an operating permit issued under the provisions of section 54 of this rule.

~~(b)~~ **(d)** Sewers shall not be located within one hundred (100) feet of any water supply well or subsurface pump suction line, except as follows:

- (1) Sewers constructed of waterworks grade ductile iron pipe with tyton or mechanical joints, or PVC pressure sewer pipe with an SDR rating of twenty-six (26) or less with compression gasket joints, may be located within the one hundred (100) foot distance.
- (2) In no case shall sewers be located closer than thirty (30) feet to any water source.

~~(e)~~ **(e)** If it is necessary to locate sewers or drains closer than two hundred (200) feet to a well or pump suction line in a mobile home park with twenty-five (25) or more lots, waterworks grade ductile iron pipe with mechanical joints, or SDR 26 PVC pressure sewer pipe with compression fittings shall be used. The piping shall not be constructed closer than seventy (70) feet to water sources.

~~(d)~~ **(f)** Water lines and sewers shall not be laid in the same trench and shall have the following requirements:

- (1) A horizontal separation of ten (10) feet shall be maintained between water lines and sewers.
- (2) Where crossings are necessary, a minimum of eighteen (18) inches vertical clearance must be maintained with the water line positioned above the sewer line when possible.
- (3) When it is impossible to maintain proper horizontal and vertical separation, the sewer shall be constructed of ductile iron pipe with mechanical joints or PVC pressure sewer pipe with an SDR rating of twenty-six (26) or less, having mechanical or compression gasket joints within ten (10) feet of the water line with the water line positioned above the sewer line when possible. The sewer shall be pressure tested to assure watertightness prior to back filling.

(Indiana State Department of Health; [410 IAC 6-10.1-61](#); filed Oct 19, 2012, 2:07 p.m.:
[20121114-IR-410120157FRA](#))

SECTION 3. [410 IAC 6-10.1-69](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-69](#) Septic tanks: construction details

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 69. (a) The minimum water depth in any compartment shall be thirty (30) inches.

(b) The maximum water depth for calculating septic tank capacity shall not exceed six and one-half (6 1/2) feet.

(c) The inlet baffle or sanitary tee shall extend at least:

- (1) eight (8) inches below the liquid level; and
- (2) to the top of the inlet sewer.

(d) All new septic tanks must be provided with an outlet filter that meets or exceeds the requirements of section 72 of this rule.

(e) Any septic tank not provided with an outlet filter shall be provided with:

- (1) an outlet baffle or sanitary tee that extends below the liquid level at least ten (10) inches, but not more than forty percent (40%) of the tank liquid depth; and
- (2) a gas deflection baffle that is:
 - (A) constructed of durable materials not subject to corrosion or decay; and
 - (B) configured to deflect rising gas bubbles toward the interior of the tank.

(f) There shall be at least one (1) inch clear space between the underside of the septic tank lid and the top of the inlet and outlet baffles or tees.

(g) Scum storage capacity (space between the liquid level and the top of the outlet baffle or tees) shall be not less than twelve and one-half percent (12.5%) of the liquid depth of the septic tank. ~~and not less than nine (9) inches.~~

(h) The inlet baffle shall not be more than twelve (12) inches nor less than four (4) inches from the inside of the inlet end of the tank. The outlet baffle shall not be more than twelve (12) inches nor less than four (4) inches from the outlet end of the septic tank. Baffles shall be constructed of durable materials not subject to corrosion or decay.

(i) The bottom of the septic tank inlet shall not be less than two (2) inches nor more than four (4) inches above the liquid level.

(j) Reinforced concrete septic tanks shall be constructed of concrete with a compressive strength of four thousand (4,000) pounds per square inch or greater.

(k) Concrete septic tank walls shall be at least two and one-half (2 1/2) inches or greater in thickness. The design must allow at least one (1) inch cover over reinforcing steel or welded wire fabric.

(l) Concrete septic tank bottoms shall conform to the specifications set forth for septic tank walls.

(m) Concrete septic tank tops shall be a minimum of four (4) inches in thickness and reinforced with three-eighths (3/8) inch reinforcing rods in a twelve (12) inch grid or equivalent.

(n) Type III fibers are permitted only as a secondary reinforcing material. Fiber additions will be considered only for the purpose of resisting temperature and shrinkage efforts, and not as primary reinforcing material.

(o) All access openings shall meet the following requirements:

- (1) At least one (1) opening eighteen (18) inches in minimum dimension per compartment for pumping access.
- (2) An access opening shall be located over each of the following:
 - (A) The inlet.
 - (B) The outlet.
 - (C) The sanitary tee or baffle, if present, on the partition or divider wall of a two-compartment septic tank.
- (3) All access openings shall be sized and positioned in such a way as to allow for maintenance, cleaning, and servicing of septic tanks and outlet filters.

(p) All risers shall meet the following requirements:

- (1) Risers and riser covers shall be made of corrosion resistant materials and withstand design external loads.
- (2) The lower section of the riser assembly shall be:
 - (A) cast into the tank lid; or
 - (B) sealed to the top of the tank with butyl sealant meeting ASTM C 990-09 to provide a watertight seal.
- (3) All risers shall be fitted with watertight, securely fastened covers.

(q) Pipe connectors shall be provided that meet the following requirements:

- (1) Each pipe penetration shall be sealed with a resilient rubber pipe connector that uses an expansion ring, tension band, or a take-up device for mechanically compressing the resilient portion of the connector against the pipe.
- (2) All metallic mechanical devices, including expansion rings, tension bands, take-up devices, and screws, shall be constructed of series 300 stainless steel.
- (3) Connectors shall conform to:
 - (A) ASTM C 1644-06, Standard Specification for Resilient Connectors Between Reinforced Concrete On-Site Wastewater Tanks and Pipes; or
 - (B) ASTM C 923-08, Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

(Indiana State Department of Health; [410 IAC 6-10.1-69](#); filed Oct 19, 2012, 2:07 p.m.:
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SECTION 4. [410 IAC 6-10.1-72](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-72](#) Outlet filters

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 72. (a) An outlet filter shall be installed in the septic tank of new on-site sewage systems and existing on-site sewage systems requiring a new septic tank.

(b) For on-site sewage systems requiring repair, or soil absorption systems requiring replacement, the department may require an outlet filter. The outlet filter, if required by the department, must meet the requirements of this section.

(c) Outlet filters shall be located in the outlet end of:

- (1) a single septic tank when not used in series;
- (2) the second compartment of two-compartment septic tanks;
- (3) the last septic tank when two (2) or more tanks are used in series; or
- (4) a secondary watertight structure located after the last septic tank prior to a dosing tank, distribution box, or secondary treatment unit.

(d) An access opening of eighteen (18) inches in minimum dimension shall be:

- (1) located over the outlet filter; and
- (2) provided with a riser to grade that meets the minimum requirements of section 69(o) and 69(p) of this rule.

(e) Outlet filters shall:

(1) conform to NSF/ANSI Standard 46-2010a, Evaluation of Components and Devices Used in Wastewater Treatment Systems, maintain a current product listing with an ANSI accredited third-party certifier, and bear a listing mark;

(2) be rated by the manufacturer for a daily flow equal to or greater than the liquid capacity of the septic tank;

~~(2)~~ **(3)** prevent the passage of solids larger than one-eighth (1/8) of an inch;

~~(3)~~ **(4)** have inlets and outlets of at least four (4) inches in diameter;

~~(4)~~ **(5)** function without a bypass of unfiltered sewage, sludge, or scum, during normal use and during cleaning or exchange;

~~(5)~~ **(6)** be made of a noncorrosive material designed for use in sewage applications;

~~(6)~~ **(7)** maintain structural integrity, not tearing or distorting so as to make it inoperable during normal operation, throughout the life of the device; and

~~(7)~~ **(8)** have removable outlet filter cartridges.

(f) The outlet filter housing shall:

(1) connect to the outlet pipe or structure wall with noncorrosive fasteners;

(2) extend at least five (5) inches above the liquid level of the tank;

(3) be installed so the bottom of the filter inlet extends below the liquid level at least ten (10) inches, but not more than forty percent (40%) of the septic tank liquid depth;

(4) include a gas deflection device that remains in place when the filter cartridge is removed; and

(5) be solvent welded to a PVC Schedule 40 outlet pipe that meets the minimum requirements of section 75(a)(1) or 75(a)(2) of this rule, creating a watertight and mechanically sound joint.

(g) A filter alarm may be installed in the septic tank to indicate when the outlet filter is in need of service.

(h) An outlet filter with cartridge shall remain in service for the life of the septic tank.

(i) Outlet filter manufacturers shall provide installation and maintenance instructions with each outlet filter.

Outlet filters shall be:

(1) installed according to manufacturer's recommendations;

(2) located so they do not interfere with pumping and cleaning of the septic tank; and

(3) placed to allow accessibility for routine maintenance without entering the septic tank or outlet structure if separate from the septic tank.

(j) Outlet filters shall be serviced according to the manufacturer's service recommendations, but no less frequently than each time the septic tank is cleaned, as follows:

(1) The outlet filter shall be:

(A) cleaned and washed so that the filter waste enters the septic tank; or

(B) exchanged with a clean filter.

(2) All contaminated effluent filters shall be treated as untreated sewage and handled properly during the cleaning or exchange process.

(Indiana State Department of Health; [410 IAC 6-10.1-72](#); filed Oct 19, 2012, 2:07 p.m.:
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SECTION 5. [410 IAC 6-10.1-84](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-84](#) Subsurface trench flood dosed on-site sewage systems: design and construction requirements

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 84. (a) Subsurface trench flood dosed on-site sewage systems shall meet all of the requirements of:

(1) sections 82 and 83 of this rule; and

(2) this section.

(b) When a subsurface trench flood dosed soil absorption system is used, the dosing effluent pump shall be

sized, and its controls set to deliver the DDF to the soil absorption field in each dose. Effluent pump selection shall be based on manufacturer's pump curves for the required discharge rate from Table VIII, as follows, at the total head imposed on the pump:

| Table VIII - Required Effluent Pump Discharge Rates for Subsurface Trench Flood Dosed On-Site Sewage Systems | |
|--|--------------------------------------|
| Design Daily Flow | Discharge Rate in Gallons per Minute |
| 150-299 | 30-35 |
| 300-449 | 30-35 |
| 450-599 | 30-45 |
| 600-749 | 30-60 |
| 750-899 | 38-75 |
| 900+ | 45-90 |

(c) The total head for a subsurface trench flood dosed soil absorption system shall be the elevation difference between the effluent pump off and the highest point in the force main or the outlet of the effluent force main in the distribution box, whichever is the highest elevation, in addition to the friction loss in the effluent force main expressed in feet.

(d) The effluent force main shall drain unless it is installed below the frost line, as listed in Table IX, as follows, and designed so that no effluent remains in any portion of the effluent force main located above the frost line:

| Table IX - Frost Penetrations in Indiana (in inches) | | | | | |
|--|----|------------|----|-------------|----|
| Adams | 60 | Franklin | 48 | Lawrence | 48 |
| Allen | 60 | Fulton | 60 | Madison | 60 |
| Bartholomew | 48 | Gibson | 42 | Marion | 54 |
| Benton | 60 | Grant | 54 | Marshall | 60 |
| Blackford | 60 | Greene | 54 | Martin | 48 |
| Boone | 54 | Hamilton | 54 | Miami | 60 |
| Brown | 48 | Hancock | 54 | Monroe | 48 |
| Carroll | 60 | Harrison | 36 | Montgomery | 60 |
| Cass | 60 | Hendricks | 54 | Morgan | 48 |
| Clark | 36 | Henry | 54 | Newton | 60 |
| Clay | 54 | Howard | 60 | Noble | 60 |
| Clinton | 54 | Huntington | 60 | Ohio | 42 |
| Crawford | 36 | Jackson | 48 | Orange | 42 |
| Daviess | 48 | Jasper | 60 | Owen | 54 |
| Dearborn | 48 | Jay | 60 | Parke | 60 |
| Decatur | 48 | Jefferson | 42 | Perry | 36 |
| Dekalb | 60 | Jennings | 48 | Pike | 42 |
| Delaware | 60 | Johnson | 54 | Porter | 60 |
| Dubois | 42 | Knox | 48 | Posey | 42 |
| Elkhart | 60 | Kosciusko | 60 | Pulaski | 60 |
| Fayette | 54 | LaGrange | 60 | Putnam | 54 |
| Floyd | 36 | Lake | 60 | Randolph | 54 |
| Fountain | 60 | LaPorte | 60 | Ripley | 48 |
| | | | | Rush | 54 |
| | | | | St. Joseph | 60 |
| | | | | Scott | 36 |
| | | | | Shelby | 54 |
| | | | | Spencer | 36 |
| | | | | Starke | 60 |
| | | | | Steuben | 60 |
| | | | | Sullivan | 54 |
| | | | | Switzerland | 42 |
| | | | | Tippecanoe | 60 |
| | | | | Tipton | 60 |
| | | | | Union | 48 |
| | | | | Vanderburgh | 36 |
| | | | | Vermillion | 60 |
| | | | | Vigo | 60 |
| | | | | Wabash | 60 |
| | | | | Warren | 60 |
| | | | | Warrick | 36 |
| | | | | Washington | 36 |
| | | | | Wayne | 54 |
| | | | | Wells | 60 |
| | | | | White | 60 |
| | | | | Whitley | 60 |

(e) In addition to the liquid holding capacity of a dosing tank stated in section 70(f) of this rule the following shall apply:

(1) If the effluent force main drains to the soil absorption system, or if it does not drain between doses, the dosing tank dose volume shall be the DDF.

(2) If the effluent force main drains back to the dosing tank, the dosing tank dose volume shall be the DDF plus the volume contained in the effluent force main.

(f) The distal end of the effluent force main in the distribution box must be fitted with an elbow turned down, or else the distribution box must be baffled.

(g) The minimum inside diameter of the effluent force main shall be one (1) inch. The maximum inside diameter of the effluent force main shall be four (4) inches.

(h) Tables X and XI, as follows, shall be used in determining friction losses in the effluent force mains and manifold when plastic pipe is used:

| Table X - Friction Losses in Plastic Pipe (per 100 feet of pipe) | | | | | | | | | | | | | | |
|--|------|----------------|--------|----------------|--------|----------------|------|----------------|--------|----------------|------|----------------|------|----------------|
| Pipe Diameter, Flow (gpm), Velocity (v) ² , and Friction Loss Head (H _f) ¹ | | | | | | | | | | | | | | |
| Flow (gpm) | 1" | | 1 1/4" | | 1 1/2" | | 2" | | 2 1/2" | | 3" | | 4" | |
| Q | v | H _f | v | H _f | v | H _f | v | H _f | v | H _f | v | H _f | v | H _f |
| 1 | 0.37 | 0.11 | | | | | | | | | | | | |
| 2 | 0.74 | 0.38 | 0.43 | 0.10 | | | | | | | | | | |
| 3 | 1.11 | 0.78 | 0.64 | 0.21 | 0.47 | 0.10 | | | | | | | | |
| 4 | 1.49 | 1.31 | 0.86 | 0.35 | 0.63 | 0.16 | | | | | | | | |
| 5 | 1.86 | 1.92 | 1.07 | 0.52 | 0.79 | 0.24 | | | | | | | | |
| 6 | 2.23 | 2.70 | 1.29 | 0.71 | 0.95 | 0.33 | 0.57 | 0.10 | | | | | | |
| 8 | 2.97 | 4.59 | 1.72 | 1.19 | 1.26 | 0.56 | 0.77 | 0.17 | | | | | | |
| 10 | 3.71 | 6.90 | 2.15 | 1.78 | 1.58 | 0.83 | 0.96 | 0.25 | 0.67 | 0.11 | | | | |
| 15 | 5.57 | 14.7 | 3.22 | 3.76 | 2.37 | 1.74 | 1.43 | 0.52 | 1.01 | 0.22 | | | | |
| 20 | 7.43 | 25.2 | 4.29 | 6.42 | 3.16 | 2.96 | 1.91 | .87 | 1.34 | 0.37 | 0.87 | 0.13 | | |
| 25 | 9.28 | 38.6 | 5.37 | 9.74 | 3.94 | 4.46 | 2.39 | 1.29 | 1.68 | 0.54 | 1.09 | 0.19 | | |
| 30 | | | 6.44 | 13.6 | 4.73 | 6.27 | 2.87 | 1.81 | 2.01 | 0.76 | 1.30 | 0.26 | | |
| 35 | | | 7.51 | 18.2 | 5.52 | 8.40 | 3.35 | 2.42 | 2.35 | 1.01 | 1.52 | 0.35 | 0.88 | 0.10 |
| 40 | | | 8.59 | 23.6 | 6.30 | 10.7 | 3.83 | 3.12 | 2.68 | 1.28 | 1.74 | 0.44 | 1.01 | 0.12 |
| 45 | | | | | 7.09 | 13.5 | 4.30 | 3.85 | 3.02 | 1.54 | 1.95 | 0.55 | 1.13 | 0.15 |
| 50 | | | | | 7.88 | 16.5 | 4.78 | 4.68 | 3.35 | 1.93 | 2.17 | 0.67 | 1.26 | 0.18 |
| 60 | | | | | 9.47 | 23.6 | 5.74 | 6.62 | 4.02 | 2.72 | 2.60 | 0.94 | 1.51 | 0.25 |
| 70 | | | | | | | 6.70 | 8.86 | 4.69 | 3.67 | 3.04 | 1.25 | 1.76 | 0.33 |
| 80 | | | | | | | 7.65 | 11.5 | 5.36 | 4.69 | 3.47 | 1.59 | 2.02 | 0.42 |
| 90 | | | | | | | 8.60 | 14.3 | 6.03 | 5.83 | 3.91 | 1.99 | 2.27 | 0.52 |
| 100 | | | | | | | | | 6.70 | 7.13 | 4.34 | 2.42 | 2.52 | 0.63 |
| 125 | | | | | | | | | 8.38 | 10.9 | 5.43 | 3.72 | 3.15 | 0.96 |
| 150 | | | | | | | | | | | 6.51 | 5.16 | 3.78 | 1.34 |
| 175 | | | | | | | | | | | 7.60 | 6.90 | 4.41 | 1.79 |
| 200 | | | | | | | | | | | 8.68 | 8.93 | 5.04 | 2.27 |
| 225 | | | | | | | | | | | | | 5.67 | 2.84 |
| 250 | | | | | | | | | | | | | 6.30 | 3.37 |
| 275 | | | | | | | | | | | | | 6.93 | 4.13 |
| 300 | | | | | | | | | | | | | 7.56 | 4.87 |
| 325 | | | | | | | | | | | | | 8.19 | 5.70 |

¹ This figure is based on flows for PVC Schedule 40 pipe (flow coefficient: C-150). Other values for friction loss may be used if documentation from the pipe manufacturer is provided with the plan submittal. Calculations using the Hazen-Williams equation may be used if provided with the plan submittal.

² Flow velocity must be at least 2 fps; flow velocities above 5 fps should be avoided.

| Table XI - Plastic Pipe Fittings: Friction Loss - Equivalent Length of Straight Pipe (ft.)* | | | | | | | |
|---|-----|--------|--------|-----|--------|------|------|
| Fitting: | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| 90° elbow, standard sharp, inside radius | 5.3 | 6.7 | 7.5 | 8.6 | 9.3 | 11.1 | 13.1 |
| 90° elbow, long sweep radius | 2.5 | 3.8 | 4.0 | 5.7 | 6.9 | 7.9 | 12.0 |
| 45° elbow, standard | 1.4 | 1.8 | 2.1 | 2.6 | 3.1 | 4.0 | 5.1 |

| | | | | | | | |
|---|-----|-----|-----|------|------|------|------|
| Tee Flow (run flow) | 1.7 | 2.3 | 2.7 | 4.3 | 5.1 | 6.2 | 8.3 |
| Tee Flow (branch flow) | 6.0 | 7.0 | 8.0 | 12.0 | 15.0 | 16.0 | 22.0 |
| Gate Valve | 0.6 | 0.8 | 1.0 | 1.5 | 1.6 | 2.0 | 3.0 |
| Male/Female adapter | 2.0 | 2.8 | 3.5 | 4.5 | 5.5 | 6.5 | 9.0 |
| *Assigned values. Other values for friction loss may be used if documentation from the pipe manufacturer is provided with the plan submittal. | | | | | | | |

(Indiana State Department of Health; [410 IAC 6-10.1-84](#); filed Oct 19, 2012, 2:07 p.m.:
[20121114-IR-410120157FRA](#))

SECTION 6. [410 IAC 6-10.1-98](#) IS AMENDED TO READ AS FOLLOWS:

[410 IAC 6-10.1-98](#) Abandonment of an on-site sewage system

Authority: [IC 16-19-3-4](#); [IC 16-19-3-5](#)

Affected: [IC 16-19-3-4](#)

Sec. 98. (a) When the use of an on-site sewage system is discontinued, the following procedure must be followed for all tanks and electrical service:

- (1) Electrical power must be disconnected at the source. All controls and panels must be removed.
- (2) All above ground electrical lines (~~including buried service lines~~) that will not be used for other purposes must be removed.
- (3) A licensed septic tank cleaner must pump all contents from all tanks in the on-site sewage system.
- (4) The tanks must either be:
 - (A) removed or the lids crushed into the tanks and the holes or tanks must be backfilled with debris-free sand or other granular material, concrete, or soil material that is compacted to prevent settling. (If a sand mound is being abandoned, sand, aggregate and soil cover from the sand mound may be used for filling the tank or tanks); or
 - (B) filled with flowable fill.
- (5) Properly grade and establish vegetative cover.

(b) The components of the soil absorption system may be left intact, if there are no plans to use the area for other purposes. Vegetative cover must be maintained.

(c) If effluent has surfaced, those areas must be covered with hydrated lime followed by top soil and a vegetative cover.

(d) If components of the soil absorption system are to be removed, the following procedure must be used:

- (1) A licensed septic tank cleaner must pump all contents from all distribution boxes in the on-site sewage system.

- (2) Allow sufficient time after the on-site sewage system is taken out of service and the tanks pumped to make sure the entire soil absorption system is completely dry.

- (3) A contractor must remove the distribution network, aggregate and sand (if any) from the site.

- (4) The contractor must dispose of the materials at a licensed landfill.

- (5) The site must be properly graded and a vegetative cover established.

(e) Written documentation of tank abandonment must be provided to the department and the local health department by the owner in the form of a receipt from the contractor.

(Indiana State Department of Health; [410 IAC 6-10.1-98](#); filed Oct 19, 2012, 2:07 p.m.:
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[Notice of Public Hearing](#)

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